

Notice of Allowability

Application No.

10/673,110

Examiner

Anthony S. Addy

Applicant(s)

HALL, STEVEN DEANE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/25/2003.
2. ☒ The allowed claim(s) is/are 1-46.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 08/12/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


ANTHONY S. ADDY
10/10/2005

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Taylor Davenport (Reg. No. 42466) on 10 October 2005.

The application has been amended as follows:

Claims 47-51 are cancelled

Allowable Subject Matter

2. **Claims** 1-46 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The present invention is directed to a method and apparatus for estimating the presence of RF interference in a wireless data channel.

The instant invention with respect to claims 1, 36, 40 and 44 teaches an interference detection apparatus for use in a wireless communication system, identifying the uniquely distinct features " a plurality of tracking/register (T/R) filter blocks, switchably coupled to the radio/modem device, wherein each T/R filter block is associated with and corresponds to a unique RF channel, and wherein each T/R filter

block receives an RSSI measurement from the radio/modem for its associated and corresponding channel, and wherein each T/R filter block produces and maintains noise and interference estimates for its corresponding and associated RF channel; an average noise estimation block, coupled to the plurality of T/R filter blocks, and capable of receiving the noise estimates stored in the T/R filter blocks, wherein the average noise estimation block outputs an average noise estimate of all of the noise estimates stored in the plurality of T/R filter blocks; and an interference present decision block, switchably coupled to the plurality of T/R filter blocks and adapted to receive the average noise estimate from the average noise estimation block."

The closest prior art, **Runzo, U.S. Publication Number 2003/0022645 A1** teaches an interference detection apparatus for use in a wireless communication system, wherein the wireless communication system includes a plurality of radio frequency (RF) channels transmitting RF signals, and wherein the interference detection apparatus detects the presence of interference in a selected RF channel (see paragraph 0036 through paragraph 0042 and Fig. 3), comprising: a radio/modem device adapted to receive the RF signals, wherein the radio/modem is responsive to channel control signals that select one of the plurality of RF channels, and wherein the radio/modem produces a received signal strength (RSSI) measurement corresponding to the RF signals present on a selected RF channel (see paragraph 0048 through paragraph 0050); and an interference present decision block, wherein the interference present decision block outputs an interference present indication for a selected RF channel if the interference estimated stored in the associated and corresponding T/R

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filter block exceeds the average noise estimate by a threshold value (see paragraph 0051 through paragraph 0054 and Fig. 5; blocks 226, 230 and 236). However, Runzo fails to anticipate or render the above underlined limitations in combination with all the recited limitations of claims 1, 36, 40 and 44 obvious, over any of the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Parr, U.S. Patent Number 6,374,096 discloses system and method for detecting interference present in mobile satellite communication links based on noise floor power levels of satellite communication links.

Scarpa, U.S. Patent Number 5,325,204 discloses narrowband interference cancellation through the use of digital recursive notch filters.

Deats, U.S. Publication Number 2003/0040277 A1 discloses apparatus and method for measuring and identifying sources of communications interference.

Mansouri et al., U.S. Patent Number 5,715,282 discloses method and apparatus for detecting interference in a receiver for use in a wireless communication system.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony S. Addy whose telephone number is 571-272-7795. The examiner can normally be reached on Mon-Thur 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anthony S. Addy
October 10, 2005



JOSEPH FEILD
SUPERVISORY PATENT EXAMINER